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MONTANA WATER SUPPLY OUTLOOK

Snowpack and Streamflow Forecasts as of

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UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
P.O. Box 98
BOZEMAN, MONTANA 59715

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THE REPORT IS PREPARED BY SCS, SNOW SURVEY AND WATER SUPPLY FORECAST UNIT, P. O. Box 98, BOZEMAN, MONTANA,

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FEDERAL STATE PRIVATE
COOPERATIVE SNOW SURVEYS

Furnishes the basic data necessary for forecasting water supply for irrigation, domestic and municipal water supply, hydro electric power generation, recreation, mining and industry

"The Conservation of Water Begins with the Snow Surveyor"

STATEWIDE OUTLOOK

Average snowpack in most of Montana

February was a good snowfall month over most of the state. Higher elevations in the Flathead and Kootenai River drainages showed increases of 10 to 18 inches of snow water content. The Bitterroot and Big Hole River drainages and portions of Yellowstone National Park continue to show above average snowpack. The Snowy Mountains south of Lewistown and small areas south of Dillon and near Red Lodge, have below average water stored in the snowpack.

The remainder of the state has near average snowpack.

Warm temperatures that developed across the state melted most of the valley snow cover. The mountain snowpack settled and became more dense but did not melt above the foothills. Soil moisture oondi-tions improved in most valley areas.

Adequate irrigation supplies expected

Most major drainages should have near average spring and summer run-off. Above average runoff is forecast for the Bitterroot and Big Hole Rivers and the inflow to Yellowstone Lake.

Below average streamflow is expected from drainages flowing out of the mountain ranges in central Montana, from the Bighorn and Little Bighorn Rivers, and from Red Lodge Creek flowing into Cooney Reservoir. Irrigation supplies should be ade-quate for most areas in the state, and reservoirs should have adequate inflow for refill.

Some runoff was generated from low elevation snowmelt and rain during February but many areas reported much of the melt absorbed by the soil.

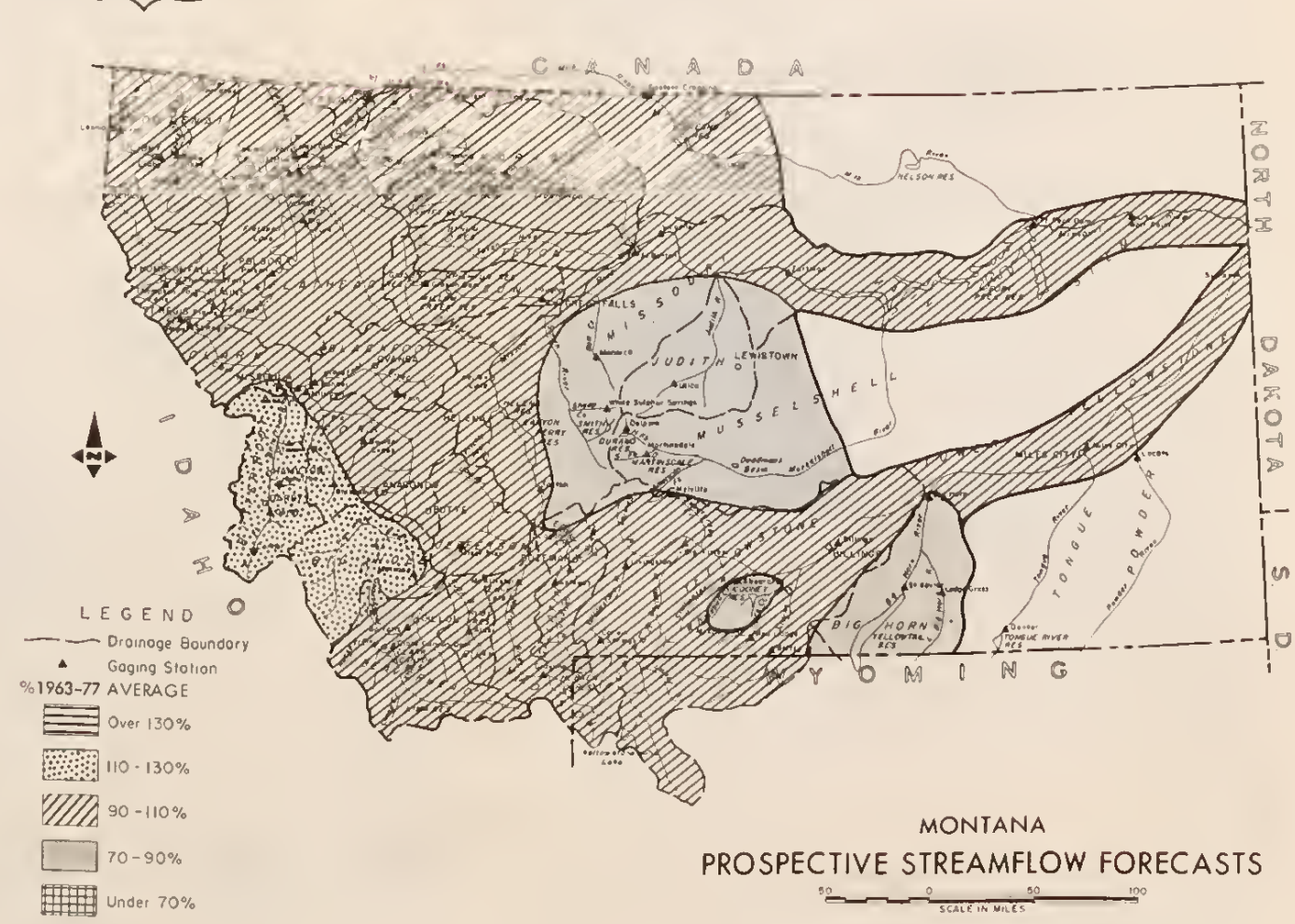
Snowfall pH measured

Again this season, snow surveyors are measuring the pH of the snow while reading their snow courses.

Snow in the southwest corner of the state and areas along the Idaho-Montana border show levels of pH in the 4.3 to 4.7 range, while other areas are reporting values in the 5.0 to 5.6 range. This is similar to the pattern of last year.

Normal pH of snowfall should be about 5.3 to 5.6 while levels below 4.7 are generally considered to be starting into the acid snow range.

Additional pH measurements will be made through the rest of this snow season.



MONTANA
PROSPECTIVE STREAMFLOW FORECASTS

Missouri River & Hudson Bay Drainages

STREAMFLOW FORECASTS

BASIN STREAM and or FORECAST POINT	PERIOD	THIS YEAR FORECAST (THOUSAND ACRE FEET) Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD (THOUSAND ACRE FEET) Last Year	PAST RECORD Average	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD (THOUSAND ACRE FEET) Last Year	PAST RECORD Average
		APRIL - SEPTEMBER				APRIL - JULY			
RED ROCK RIVER near Monida (1)		101	92	88.4	110	95.0	92	89.2	103
BEAVERHEAD RIVER near Grant (2)		172	101	133	171	150	101	131	148
BEAVERHEAD RIVER at Barratts (2)		219	97		226	190	97		196
RUBY RIVER near Alder		99.0	94		105	84.0	94		89.0
BIG HOLE RIVER near Melrose		925	117		792	860	118		730
BOULDER RIVER near Boulder		92.5	90		103	86.6	90		96.7
WILLOW CREEK near Harrison		21.3	99		21.5	19.0	99		19.2
MADISON RIVER near Grayling (3)		483	92	405	523	378	92	320	409
MADISON RIVER near McAllister (4)		842	94	716	892	670	95	602	706
GALLATIN RIVER near Gateway		530	93		572	450	92		488
INFLOW MIDDLE CREEK RESERVOIR near Bozeman (5)		27.2	90		30.3	23.6	90		26.2
HYALITE CREEK near Bozeman (6)		42.5	90		47.4	36.7	90		41.0
GALLATIN RIVER at Logan		550	85		649	475	85		557
MISSOURI RIVER at Toston (7)		2717	102	2817	2,671	2350	101	2619	2,330
SHEEP CREEK near White Sulphur Springs		19.3	85		22.8	16.7	84		19.8
SUN RIVER at Gibson Dam (8)		568	98	498	580	521	98	457	529
BELT CREEK near Monarch		118	81		146	109	81		134
MISSOURI RIVER at Fort Benton (9)		4250	102		4,148	3710	102		3,640
TWO MEDICINE CREEK near Browning (10)		257	99		259	242	99		244
BADGER CREEK near Browning		125	94		133	108	93		116
MARIAS RIVER near Shelby		585	101	432	577	545	102	408	532
MISSOURI RIVER at Virgelle (11)		4950	103		4,793	4375	103		4,238
MISSOURI RIVER near Landusky (11)		5515	106		5,214	4850	106		4,586
NORTH FORK MUSSELSHELL RIVER near Delpine		5.6	88		6.4	4.8	87		5.5
SOUTH FORK MUSSELSHELL RIVER above Martinsdale		51.0	83		61.5	48.0	83		57.6
MISSOURI RIVER below Fort Peck Dam (11)		5225	106		4,929	4640	106		4,381
MILK RIVER at Eastern Crossing		278*	100		278*				
MILK RIVER at Eastern Crossing (12)		111*	100		111*				
INFLOW LAKE SAKAKAWEA, ND (11)		13450	100		13,450	12240	100		12,239
SASKATCHEWAN RIVER BASIN									
SWIFTCURRENT CREEK at Sherburne (13)		131	99	121	132	115	100	109	115
ST. MARY'S RIVER near Babb (13)		499	100		498	427	100		426

*For March - September Period

(1) Adjusted for storage in Lima Reservoir.
(2) Adjusted for storage in Lima and Clark Canyon Reservoirs.
(3) Adjusted for storage in Hebgen Lake.
(4) Adjusted for storage in Hebgen Lake and Ennis Lake.
(5) Sum of West Fork Hyalite Creek and East Fork Hyalite Creek above the Reservoir.
(6) Adjusted for storage in Middle Creek Reservoir.
(7) Adjusted for storage in Lima, Hebgen, Ennis & Clark Canyon Reservoirs.
(8) Adjusted for storage in Gibson Reservoir & diversions.
(9) Adjusted for storage in Lima, Clark Canyon, Hebgen, Ennis, Gibson, Pishkun, Willow Creek & Canyon Ferry Reservoirs.
(10) Adjusted for storage in Two Medicine Reservoir & diversions in Two Medicine Canal.
(11) Adjusted for all upstream reservoirs.
(12) Flow at Eastern Crossing minus St. Mary's Canal.
(13) Adjusted for storage in Lake Sherburne.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE

Snowpack near average

Mountain snowfall was above average in most drainages in February. With the exception of a small area near Red Rock Lakes in the southwest corner, and the Snowy Mountains near Lewistown, all areas have near or above average amounts of water stored in the snowpack. Water content in the Madison River headwaters in Yellowstone National Park is above average. Included in the above average range are the Big Hole River drainage and parts of the Beaverhead River headwaters adjacent to the Big Hole.

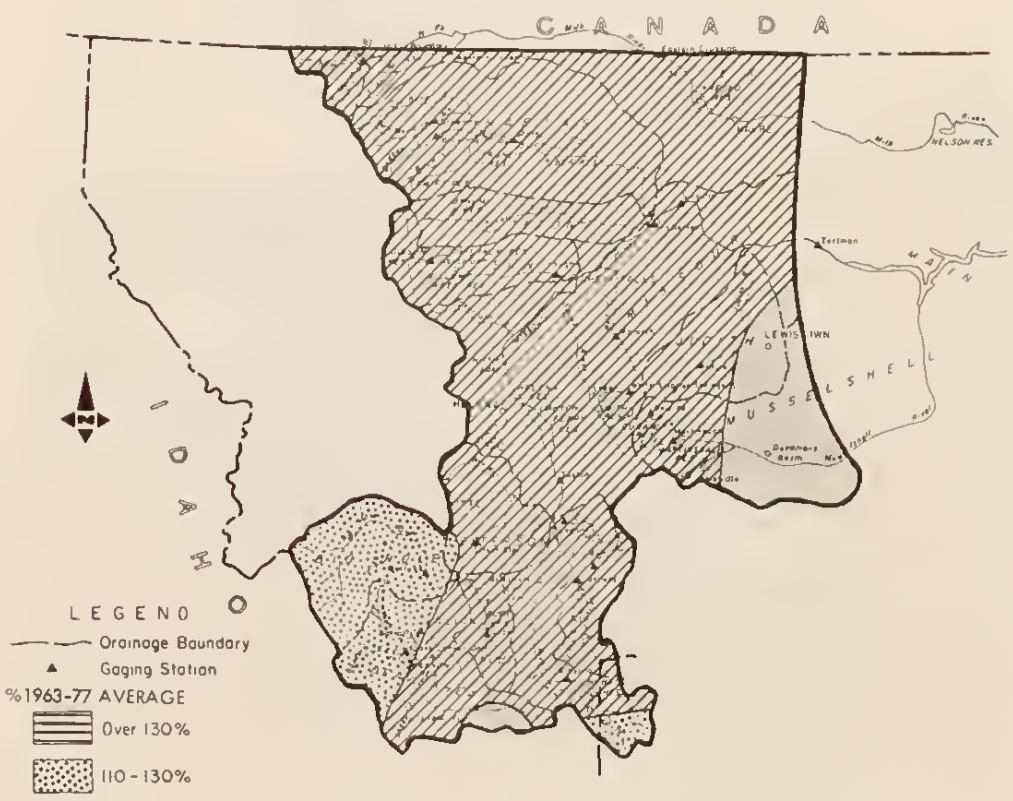
The snowpack is settling and becoming more dense with warmer temperatures. Melt occurred in most valley areas but very little snowmelt was observed above the foothill elevations.

Some valley drainages experienced runoff from recent snowmelt, but in many areas the melt water was completely absorbed by the soil.

SUMMARY of SNOW MEASUREMENTS
(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUBWATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF Last Year	Average +
Beaverhead	21	161	109
Ruby	11	153	104
Big Hole	20	180	121
Boulder	14	147	100
Jefferson	66	164	111
Madison	33	166	106
Gallatin	23	150	93
Missouri Headwater	122	162	105
West-side Missouri (Toston-Cacade)	9	135	95
Smith	8	146	97
Belt-Arrow	3	167	91
Missouri Main-stem	20	144	95
Teton & Sun	10	247	108
Marias	4	188	106
Marias-Teton-Sun	14	219	107
Judith	10	143	90
Musselshell	11	158	96
Judith-Musselshell	21	151	93
Milk	7	294	109
Bear Paws	6	474	97
Missouri (Total)	177	163	103
Saskatchewan			
St. Mary's	3	134	103
Bow River in Alberta	11	89	89

Snow Surveyors still use snowshoes for traveling to some snow course sites.



MISSOURI RIVER & HUDSON BAY DRAINAGES
MONTANA
MOUNTAIN SNOW WATER EQUIVALENT

Predictions vary throughout drainage

The Big Hole River is forecast to have above average runoff this spring and summer. Tributaries to the Missouri River other than those in central Montana are predicted to have average runoff. The Belt, Smith, Judith, Musselshell, and adjacent drainages, are expected to have below average runoff. Irrigation water supplies should be adequate in most areas. In central Montana, some late season shortages may develop on streams without reservoir storage.

Soils under the snowpack are a little drier than usual in most drainages and will require some snowmelt to replenish these moisture supplies.

WATER SUPPLY OUTLOOK Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply

STREAM or AREA	Flow Period Spring Season	Late Season
Beaverhead	Avg	Avg
Ruby	Avg	Avg
Big Hole	Exc	Exc
Boulder	Avg	Avg
Jefferson	Avg	Avg
Madison	Avg	Avg
Gallatin	Avg	Avg
West-Side Missouri	Avg	Avg
Smith-Belt	Fair	Fair
Sun	Avg	Avg
Teton	Avg	Avg
Marias	Avg	Avg
Judith	Fair	Fair
Musselshell	Fair	Fair
Milk	Avg	Avg
Bear Paws	Avg	Avg
St. Mary's	Avg	Avg

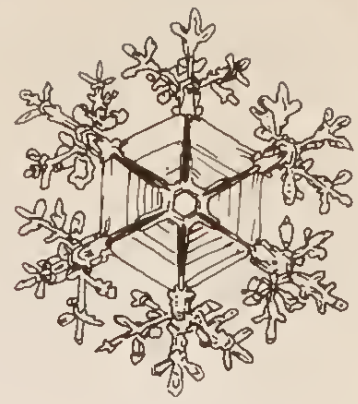
Yellowstone River Drainage

STREAMFLOW FORECASTS

BASIN, STREAM and or FORECAST POINT	PERIOD	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average*	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average
		APRIL - SEPTEMBER				APRIL - JULY			
YELLOWSTONE RIVER at Corwin Springs		2075	99	1703	2,102	1730	99	1466	1,749
YELLOWSTONE RIVER near Livingston		2400	97		2,471	1980	97		2,048
BOULDER RIVER at Big Timber		390	94		416	358	94		382
STILLWATER near Absarokee (1)		594	90		660	499	90		555
CLARKS FORK RIVER near Belfry		675	105		644	594	105		564
ROCK CREEK near Red Lodge		120	102	123	118	93.2	102	98.6	91.4
INFLOW COONEY RESERVOIR near Boyd (2)		55.0	85		64.5	45.0	86		52.5
YELLOWSTONE RIVER at Billings		4525	97	3998	4,682	3800	96	3628	3,979
BIGHORN RIVER near St. Xavier (3)		1700	84	1331	2,034	1560	84	1328	1,861
LITTLE BIGHORN RIVER near Hardin		155	79		196	138	79		174
YELLOWSTONE RIVER at Miles City (4)		6875	96		7,142	5995	96		6,243
YELLOWSTONE RIVER near Sidney (5)		7150	96		7,806	6530	96		6,805

(1) Adjusted for storage in Mystic Lake.
(2) Adjusted for storage in Cooney Reservoir.
(3) Adjusted for storage in Buffalo Bill, Boysen, Bull Lake, Pilot Butte and Bighorn Reservoirs.
(4) Adjusted for storage in Bull Lake, Buffalo Bill, Boysen, Pilot Butte, Bighorn and Tongue River Reservoirs.
(5) Adjusted for reservoirs shown in (4) and diversions into the Lower Yellowstone Canal.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE



WATER SUPPLY OUTLOOK

Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply

STREAM or AREA	Flow Period: Spring Season	Flow Period: Late Season
Yellowstone at Livingston	Avg	Avg
Shields	Avg	Avg
Boulder	Avg	Avg
Sweetgrass - Big Timber	Avg	Avg
Stillwater	Avg	Avg
Rock Creek	Avg	Avg
Clark's Fork	Avg	Avg
Yellowstone above Bighorn	Avg	Avg
Bighorn	Avg	Avg
Little Bighorn	Fair	Fair
Tongue	Fair	Fair
Powder	Fair	Fair
Lower Yellowstone	Avg	Avg

Near average runoff expected

Near average runoff is expected for most Yellowstone River drainages. The inflow to Cooney Reservoir and Bighorn River tributaries are forecast to have below average runoff. Predicted inflow to Yellowstone Lake will be above average. Mountain soils under the snowpack are a little drier than usual while most valley soils in the upper Yellowstone have good moisture from recent snowmelt.

Prospects for irrigation water supplies are good in most drainages. Cooney Reservoir has been emptied for maintenance.

Many snow courses are located at or near old mining camps. Roads built into these areas are now used for both summer and winter access

SUMMARY of SNOW MEASUREMENTS

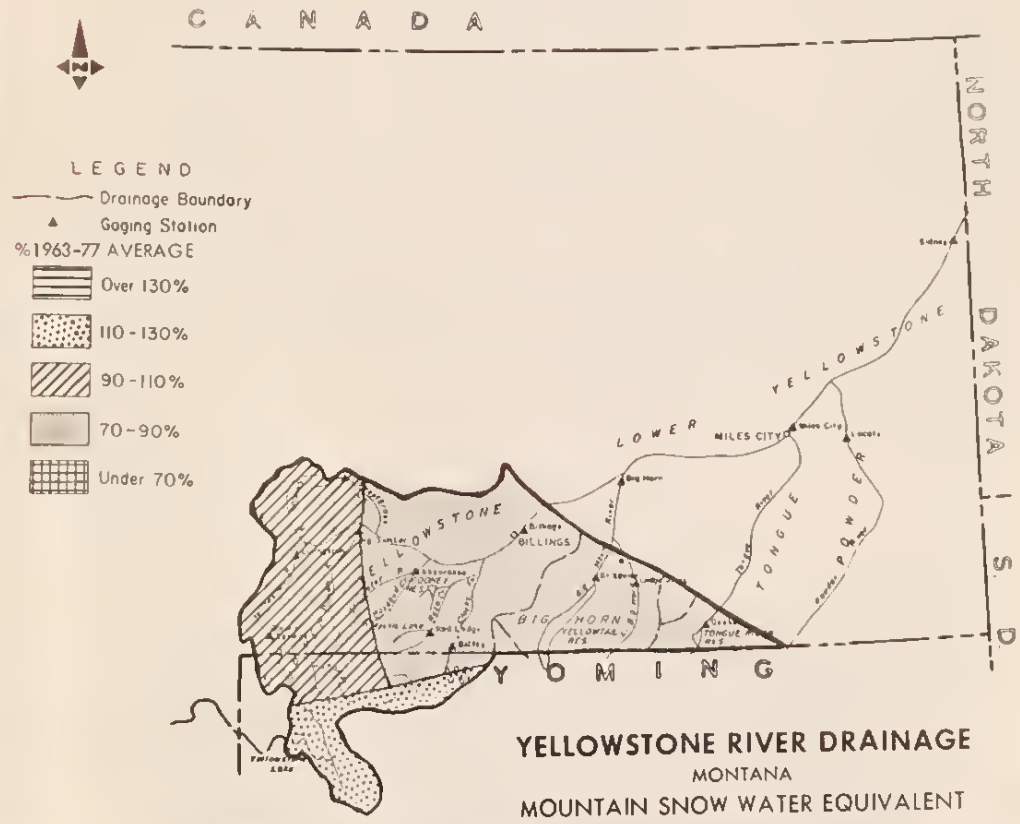
(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF: Last Year	THIS YEAR'S SNOW WATER AS PERCENT OF: Average
Upper Yellowstone ab Livingston	20	181	103
Shields	8	127	85
Boulder & Stillwater	3	157	94
Rock Creek & Clark's Fork	16	155	92
Yellowstone (ab Bighorn River)	47	161	96
Bighorn/Wyoming	16	175	94
Little Bighorn	4	158	60
Bighorn (Total)	20	173	88
Tongue	5	154	72
Powder	7	129	82
Yellowstone (Total)	79	161	93

Snowpack varies

Mountain snowfall for Februray was near to a little below average over most of the headwaters area. The drainages above Yellowstone Lake and the southern part of the Clark's Fork have above average snowpack. The area around Red Lodge and the Bighorn Mountains continues to show below average water stored in the snow.

Snowmelt occurred at lower elevations during the past month but the mountain snowpack only settled and became more dense.



YELLOWSTONE RIVER DRAINAGE
MONTANA
MOUNTAIN SNOW WATER EQUIVALENT

average monthly weather outlook

FOR MARCH 1982

SNOW SURVEY DATA

SNOW MARCH 1, 1982

DRAINAGE BASIN and/or SNOW COURSE NAME	Elevation	THIS YEAR Date of Survey	THIS YEAR Snow Depth (inches)	THIS YEAR Water Content (inches)	PAST RECORD Water Content (inches) Last Year	PAST RECORD Water Content (inches) Average
ABUNDANCE LAKE	8500	2/25	68	22.2	12.3	18.9
AMBROSE	6480	2/24	45	12.9	5.3	11.9
ARCH FALLS	7250	2/25	35	10.4	3.8	11.2
ASHLEY DIVIDE	4820	3/03	28	7.6	3.1	-
ASHLEY LAKE	4000	3/03	24	6.5	3.1	-
BADGER PASS	6900	2/28	101	38.0	21.8	36.7
BADGER PASS PILLOW	6900	2/28	SP	33.7	19.7	-
BALD EAGLE PEAK	5700	2/26	147	59.2	33.6	56.1
BALD RIDGE	7500	3/01	34	10.3	6.7	11.5
BANFIELD MOUNTAIN	5600	2/26	64	24.2	14.3	22.9
BANFIELD MOUNTAIN PILLOW	5600	2/26	SP	20.4	13.2	19.4
BAREE CREEK	5500	2/25	114	45.4	26.0	43.8
BAREE MIDWAY	4600	2/25	90	34.1	14.8	34.0
BAREE TRAIL	3800	2/25	25	8.6	.5	10.0
BARKER LAKES PILLOW	8250	3/01	SP	13.2	9.6	-
BASIN CREEK	7180	2/25	33	8.6	5.6	7.0
BASIN CREEK PILLOW	7180	3/01	SP	6.6	6.4	-
BASSOO PEAK	5150	3/01	23	7.7	4.0	9.6
BEAGLE SPRINGS	8850	2/26	36	9.7	6.0	-
BEAGLE SPRINGS PILLOW	8850	3/01	SP	9.0	4.5	-
BEAR BASIN	9150	2/23	56	19.1	12.4	19.5
BEAR PAW SKI AREA	5200	2/25	22	6.4	2.2	6.3
BEAVER LAKE	5900	2/28	67	23.4	9.9	21.9
BERRY MEADOW	7300	2/26	27	7.8	2.6	7.2
BIG CREEK	6750	2/27	97	38.6	29.6	39.4
BIG SKY	7700	3/02	50	15.2	8.0	13.8
BIG SKY MEADOW	6350	2/23	33	9.8	6.4	8.6
BIG SNOWY	7150	2/23	47	13.8	13.8	19.0
BLACK BEAR	7950	3/01	110	44.4	23.3	35.1
BLACK BEAR PILLOW	7950	3/01	SP	38.5	23.3	32.2
BLACK MOUNTAIN	7750	2/24	53	14.0	9.8	-
BLACK PINE	7100	2/26	46	14.4	5.5	13.2
BLACK PINE PILLOW	7100	2/26	SP	14.8	8.1	13.8
BLOODY DICK	7600	2/24	48	16.7	8.3	12.9
BLOODY DICK PILLOW	7600	2/24	SP	14.1	8.6	-
BLUE LAKE	5900	2/28	67	24.2	13.1	25.9
BOTS SOTS	8000	2/24	19	5.0	2.5	6.6
BOULDER MOUNTAIN	7950	2/23	60	18.0	12.0	17.1
BOULDER MOUNTAIN PILLOW	7950	3/01	SP	19.0	13.9	-
BOX CANYON	6670	2/27	32	10.6	5.6	12.1
BOX CANYON PILLOW	6670	3/01	SP	7.5	5.0	-
BRANHAM LAKES	8850	3/01	78	29.8	19.0	26.2
BRIDGER BOWL	7250	2/24	60	20.1	15.6	24.9
BRIDGER BOWL PILLOW	7250	2/24	SP	18.9	17.3	23.7
BRISTOW CREEK	3900	2/26	32	12.2	5.6	12.6
BRUSH CREEK TIMBER	5000	2/25	33	10.0	4.5	9.5
BULL MOUNTAIN	6600	2/25	22	6.2	1.4	4.9
CABIN CREEK	5200	2/26	23	6.3	1.8	6.6
CALL ROAD	8050	2/27	37	9.2	6.3	10.2
CALVERT CREEK	6450	2/25	41	13.3	6.0	11.4
CALVERT CREEK PILLOW	6450	2/25	SP	10.7	5.0	9.5
CAMP MISERY	6400	2/25	121	44.0	36.5	43.9
CAMP SENIA	7890	2/24	14	2.4	2.2	5.1
CARROT BASIN	9000	3/01	90	32.6	20.4	32.7
CARROT BASIN PILLOW	9000	3/01	SP	23.7	16.4	24.2
CASHE CREEK PILLOW	7800	3/01	SP	7.4	4.7	-
CEDAR GROVE	4100	2/26	35	12.2	2.7	12.0
CHESSMAN RESERVOIR	6200	2/24	13	3.0	1.6	3.5
CHICKEN CREEK	4060	2/23	43	15.6	10.3	-
CLOVER MEADOW	8600	2/27	49	14.6	10.2	14.9
CLOVER MEADOW PILLOW	8600	3/01	SP	16.2	10.1	-
COLE CREEK	7850	2/26	39	10.8	9.4	15.1
COLE CREEK PILLOW	7850	2/26	SP	9.6	8.9	15.0
COLLEY CREEK	6300	2/25	29	7.9	3.6	8.1
COMBINATION	5600	2/26	19	5.6	1.0	5.6
COMBINATION PILLOW	5600	2/26	SP	5.6	1.8	5.8
COOKE STATION	8150	2/24	58	19.1	11.3	19.0
COPPER BOTTOM	5200	2/28	39	12.7	4.0	11.5
COPPER BOTTOM PILLOW	5200	2/28	SP	13.0	6.7	13.0
COPPER CAMP	6950	2/28	84	32.0	18.2	29.8
COPPER CAMP PILLOW	6950	2/28	SP	34.6	19.8	32.2
COPPER CREEK	5700	2/28	44	16.3	4.8	15.1
COPPER LAKE CREEK	6100	2/28	68	26.3	10.5	23.5
COPPER MOUNTAIN	7700	2/27	39	11.6	7.7	9.9
COTTONWOOD CREEK	6400	2/26	25	7.0	4.1	8.0
COYOTE HILL	4200	2/26	32	11.1	4.6	10.0
CREVICE MOUNTAIN	8400	2/25	38	9.6	4.3	9.8
CRYSTAL LAKE	6100	2/23	31	8.0	9.4	12.4
CRYSTAL LAKE PILLOW	6100	3/01	SP	8.2	6.9	-
DAD CREEK LAKE	8400	2/26	49	14.0	7.0	11.6
DAISY PEAK	7600	2/25	44	11.1	5.2	10.0
DALY CREEK	5780	2/26	42	12.6	4.6	10.7
DALY CREEK PILLOW	5780	3/01	SP	11.4	7.9	-
DARKHORSE LAKE	8600	2/26	80	30.4	16.4	25.2
DARKHORSE LAKE PILLOW	8600	3/01	SP	28.8	15.0	-
DAVIS CREEK	5400	2/26	67	25.5	17.9	22.9
DEADMAN CREEK	6450	2/24	34	9.8	6.0	11.0
DEADMAN CREEK PILLOW	6450	2/24	SP	9.1	4.1	9.8
DESERT MOUNTAIN	5600	2/25	46	14.9	10.9	14.5
DEVILS SLIDE	8100	2/25	54	17.4	10.4	20.0
DISCOVERY BASIN	7050	2/24	37	10.4	5.9	9.9
DIVIDE	7900	2/27	37	9.8	5.5	9.5
DIVIDE PILLOW	7900	2/27	SP	10.3	6.2	10.1
DIX HILL	6400	2/27	39	12.2	6.2	9.9
EAST FORK R.S.	5400	2/25	25	8.2	.8	6.8
EL DORADO MINE	7800	2/24	62	18.8	12.2	18.9
ELK HORN SPRINGS	7800	2/26	34	9.4	5.0	9.5
ELK PEAK	8000	2/25	47	13.2	10.6	14.9
EMERY CREEK	4350	2/25	47	16.3	11.8	14.9
EMERY CREEK PILLOW	4350	2/25	SP	15.5	10.8	-
FATTY CREEK	5500	2/27	60	22.7	14.5	20.8
FISH CREEK	8000	2/25	39	10.8	5.8	8.3
FISHER CREEK	9100	2/24	96	37.6	21.0	34.4
FISHER CREEK PILLOW	9100	2/24	SP	32.2	20.8	32.3
FIVE-MILE	5700	2/28	23	7.5	.8	6.9
FLATTOP MOUNTAIN PILLOW	6300	3/01	SP	41.9	37.7	44.5
FLEECER RIDGE	7500	2/25	41	12.0	5.7	10.1
FOOLHEN	8240	2/24	56	16.7	10.6	15.6
FOUR MILE	6900	2/23	26	5.6	5.3	7.7
FOURTH OF JULY	3450	2/24	24	7.6	2.5	-
FRED BURR PASS	8000	2/23	76	25.0	14.8	22.9
FREIGHT CREEK	6000	2/28	47	15.9	7.8	14.1
FRIDAY HILL	4620	2/24	56	19.0	13.0	-
FROHNER MEADOWS	6480	2/24	26	6.4	2.3	7.5
FROHNER MEADOWS PILLOW	6480	2/24	SP	7.4	5.3	8.0
GARVER CREEK	4250	2/26	35	11.8	7.9	11.4
GARVER CREEK PILLOW	4250	2/26	SP	9.3	8.0	10.3
GIBBONS PASS	7100	2/23	73	26.3	16.5	21.2
GOAT MOUNTAIN	7000	2/27	39	10.3	3.5	10.1
GOLD CREEK LAKE	7200	2/24	48	14.1	8.0	14.0
GOLD STONE	8100	2/24	59	21.0	11.9	15.5
GRASSHOPPER	7000	2/25	18	4.8	1.0	5.3
GRAVE CREEK	4300	2/23	46	16.4	9.4	17.5
GRAVE CREEK PILLOW	4300	2/23	SP	16.6	9.2	17.4
GRIFFIN CREEK DIVIDE	5150	3/02	38	11.9	5.5	10.9
GRIZZLY PEAK	8640	2/26	36	9.9	8.1	13.2
GUNSIGHT LAKE	6300	2/28	106	40.8	24.2	38.2
HAND CREEK	5030	2/25	42	12.9	8.4	11.8
HAND CREEK PILLOW	5030	3/01	SP	13.2	8.4	-
HAWKINS LAKE	5450	2/26	84	31.0	22.2	28.6
HAWKINS LAKE PILLOW	6450	2/26	SP	26.1	19.5	27.5
HEART LAKE TRAIL	4800	2/25	58	20.8	7.6	21.1
HEGEN DAM	5550	2/25	36	11.6	7.3	11.2
HELL ROARING DIVIDE	5770	2/27	80	26.9	21.6	29.6
HERRIG JUNCTION	4850	2/23	75	25.0	18.7	-
HOLBROOK	4530	2/25	32	10.3	4.0	9.6
HOOD MEADOW	6600	2/25	30	9.1	3.2	9.7
HOODOO BASIN	6000	2/25	137	49.9	30.6	45.4
HOODOO BASIN PILLOW	6000	3/01	SP	47.3	25.9	44.0
HOODOO CREEK	5900	2/25	130	47.5	25.8	42.0
INDEPENDENCE	7850	2/27	46	15.8	10.3	17.1
INTERGAARD	6450	2/26	25	7.3	4.0	7.9
JACK CREEK	7500	2/23	18	4.2	2.2	4.9
JAHNKE LAKE TRAIL	7200	2/24	41	12.8	6.4	9.1
JOHNSON PARK	6450	2/25	28	6.8	2.4	6.8
KEELER CREEK	3300	2/26	39	14.7	1.9	14.6
KINGS HILL	7500	2/24	46	12.8	8.2	12.7
KISHENEHN	3890	2/27	33	9.4	5.8	8.6
KIWANIS CAMP	3720	2/25	11	2.0	.0	1.7
KRAFT CREEK PILLOW	4750	3/01	SP	15.5	4.3	-
LAKE CREEK	6100	2/27	28	6.9	4.2	9.5
LAKEVIEW CANYON	6930	2/26	24	6.7	7.2	10.8
LAKEVIEW RIDGE	7400	2/26	25	6.9	6.5	9.7
LAKEVIEW RIDGE PILLOW	7400	3/01	SP	8.2	9.1	-
LEMHI PASS	7480	2/26	30	8.8	5.0	8.1
LEMHI RIDGE	8100	2/26	38	10.8	6.2	8.9
LEMHI RIDGE PILLOW	8100	2/26	SP	10.4	6.8	9.0
LICK CREEK	6860	2/25	32	8.8	5.4	9.0
LICK CREEK PILLOW	6860	2/25	SP	7.7	7.7	8.6
LITTLE PARK	7400	2/23	48	15.0	9.6	14.6
LOGAN CREEK	4300	2/25	25	7.0	3.8	7.3
LONE MOUNTAIN	8880	2/27	74	23.6	11.8	20.5
LOST HORSE	5940	2/25	95	40.0	15.4	30.2
LOST SOUL	4800	2/26	47	16.9	10.8	15.6
LOWER TWIN	7900	2/23	60	23.0	13.9	18.7
LOWER TWIN PILLOW	7900	3/01	SP	16.6	15.1	-
LUBRECHT FLUME	4800	3/01	22	8.0	.0	6.5
LUBRECHT FLUME PILLOW	4800	3/01	SP	7.7	0.7	6.4
LUBRECHT FOREST # 3	5450	2/28	29	8.4	2.7	7.0
LUBRECHT FOREST # 4	4650	2/28	15	5.0	.6	3.5
LUBRECHT FOREST # 6	4040	2/28	20	6.1	.6	4.0
LUBRECHT HYDROPLOT	4200	3/01	25	8.4	1.2	5.7
MADISON PLATEAU	7750	3/01	63	22.5	13.1	17.8
MADISON PLATEAU PILLOW	7750	3/01	SP	22.4	14.5	18.7
MANY GLACIER	4960	2/27	56	20.6	12.8	-
MANY GLACIER PILLOW	4960	3/01	SP	16.6	14.2	-
MARIAS PASS	5250	2/27	54	20.5	9.6	16.3
MAYNARD CREEK	6210	2/24	34	10.3	7.2	12.6
MAYNARD CREEK PILLOW	6210	2/24	SP	8.6	9.1	10.0
MIDDLE MILL CREEK	7850	3/01	46	15.4	11.8	14.7
MILL CREEK	7500	2/25	41	12.0	7.0	12.0
MINERAL CREEK	4000	2/25	55	18.0	12.4	17.2
MONUMENT PEAK	8800	2/27	70	24.0	15.7	24.3
MONUMENT PEAK PILLOW	8800	3/01	SP	19.0	11.9	-
MOULTON RESERVOIR	6850	2/26	29	7.7	4.0	-
MOUNT LOCKHART	6400	3/01	68	24.4	10.6	20.6
MOUNT LOCKHART PILLOW	6400	3/01	SP	22.4	10.9	18.2
MUDD LAKE	7650	2/25	63	24.2	11.8	18.7
MULE CREEK	8300	2/25	52	16.5	9.7	-
MULE CREEK PILLOW	8350	3/01	SP	14.8	8.4	-
NEVADA CREEK	6480	2/28	43	13.8	8.2	-
NEVADA CREEK PILLOW	6480	3/01	SP	12.8	8.4	-
NEW WORLD	6700	2/22	35	11.2	8.9	13.2
NEWTON MOUNTAIN	5600	2/24	86	31.6	25.5	-
NEZ PERCE CAMP	5650	2/25	53	18.2	9.3	13.8
NEZ PERCE CAMP PILLOW	5650	2/25	SP	17.9	9.3	-
NEZ PERCE CREEK	6500	2/27	24	6.8	3.8	7.0
NEZ PERCE PASS	6570	2/25	55	19.5	8.5	15.7
NOISY BASIN	6040	2/25	111	40.0	35.6	39.6
NOISY BASIN PILLOW	6040	3/01	SP	35.3	31.2	34.4
NORTH FK. ELK CREEK	6250	3/01	43	12.8	5.7	11.7
NORTH FK. ELK CREEK PILLOW	6250	3/01	SP	13.9	6.2	11.9
NORTH FORK JOCKO	6330	2/27	106	42.2	27.8	41.1
NORTH MEADOW	7500	2/23	27	6.2	4.6	7.2
NORTHEAST ENTRANCE	7400	2/28	28	8.3	4.4	9.1
NORTHEAST ENTRANCE PILLOW	7400	2/28	SP	8.1	5.0	8.7
NOTCH	8500	2/27	44	12.4	8.2	13.3
OPHIR PARK	7150	2/27	54	17.2	12.6	17.9
PETERSON MEADOWS	7200	2/22	33	8.8	6.8	9.1
PETERSON MEADOWS PILLOW	7200	2/22	SP	8.5	7.2	9.1
PICKFOOT CREEK	6650	2/23	35	9.7	4.3	-
PICKFOOT CREEK PILLOW	6650	3/01	SP	8.5	4.0	-
PICNIC GROUNDS	5500	2/26	18	5.0	1.1	4.2
PIKE CREEK PILLOW	5930	3/01	SP	27.9	15.7	-
PIPESTONE PASS	7200	2/27	15	4.0	1.0	4.5
PLACER BASIN PILLOW	8830	3/01	SP	11.9	10.2	-
POORMAN CREEK	5100	2/26	86	36.0	16.6	32.4
POORMAN CREEK PILLOW	5100	2/26	SP	31.9	14.4	29.6
PORCUPINE	6500	3/01	18	6.0	3.2	6.7
PORCUPINE PILLOW	6500	3/01	SP	5.7	3.8	-
POTOMAGETON PARK	7150	2/25	41	12.3	8.4	13.4
RED MOUNTAIN	6000	3/01	56	19.2	11.9	17.5

SNOW SURVEY DATA

* * CONTINUED * *

SNOW MARCH 1, 1982		THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (inches)	Water Content (inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average
RED TOP	5260	2/24	72	26.4	19.8	-
ROCK CREEK	5600	2/23	21	6.6	4.8	8.5
ROCK CREEK MEADOWS	8160	2/24	63	20.4	12.2	19.4
ROCKER PEAK	8000	2/26	45	13.9	10.6	13.7
ROCKER PEAK PILLOW	8000	2/26	SP	14.3	11.4	13.0
ROCKY BOY	4700	2/25	12	3.4	.2	4.5
ROCKY BOY PILLOW	4700	2/25	SP	4.8	1.8	4.4
SACAJAWEA	6550	2/24	38	11.5	8.4	13.3
SADDLE MOUNTAIN	7940	2/23	85	28.6	17.0	22.9
SADDLE MOUNTAIN PILLOW	7940	2/23	SP	29.0	17.9	23.9
SENTINEL CREEK	8300	2/26	64	20.0	13.8	21.3
SHOWER FALLS	8100	2/25	58	19.1	11.7	21.4
SHOWER FALLS PILLOW	8100	3/01	SP	18.7	13.2	21.0
SILVER RUN	6630	2/26	6	1.2	1.0	4.5
SILVER RUN PILLOW	6630	2/26	SP	1.8	1.5	-
SKALKAHO SUMMIT	7260	2/24	81	28.4	15.3	23.9
SKALKAHO SUMMIT PILLOW	7260	3/01	SP	28.1	14.7	-
SKYLARK TRAIL PILLOW	6200	3/01	SP	35.1	16.7	-
SLAG-A-MELT LAKE	8750	2/26	81	29.7	17.3	24.2
SLIDE ROCK MOUNTAIN	7100	2/25	52	15.6	7.2	15.2
SMUGGLER PINE	6960	3/01	33	9.7	5.6	8.9
SOUTH FORK SHIELDS	8100	3/01	58	20.6	16.0	21.3
SOUTH FORK SHIELDS PILLOW	8100	3/01	SP	14.0	11.6	-
SPOTTED BEAR MOUNTAIN	7000	2/28	46	15.8	6.6	14.6
SPUR PARK	8100	2/24	66	20.3	13.6	19.2
SPUR PARK PILLOW	8100	2/24	SP	19.9	14.0	20.0
STAHL PEAK	6050	2/23	98	34.3	27.5	36.8
STAHL PEAK PILLOW	6050	2/23	SP	30.0	23.8	29.8
STEMPLE PASS	6600	2/25	38	9.9	5.2	9.6
STORM LAKE	7780	2/22	40	10.3	8.0	11.6
STRYKER BASIN	6180	2/23	91	29.9	21.5	-
STUART MILL	6500	2/26	20	6.2	1.8	6.4
STUART MOUNTAIN	7400	2/27	82	30.0	21.5	29.3
SUCKER CREEK	3960	2/25	3	.8	.0	0.7
SUGARLOAF	7350	2/26	35	9.8	6.8	9.5
TAYLOR ROAD	4080	2/25	11	3.0	.1	3.3
TEN MILE LOWER	6600	2/23	24	5.8	4.0	6.8
TEN MILE MIDDLE	6800	2/23	38	9.6	8.6	10.2
TEN MILE UPPER	8000	2/23	44	11.3	11.4	12.8
TEPEE CREEK	8000	2/27	48	13.9	8.4	14.0
TEPEE CREEK PILLOW	8000	2/27	SP	11.3	8.9	11.1
TIMBERLINE CREEK	8850	2/24	40	8.8	8.5	13.0
TRAIL CREEK	7090	2/26	30	8.5	4.6	7.3
TRINKUS LAKE	6100	2/27	106	41.6	28.0	40.2
TRUMAN CREEK	4060	2/26	14	4.4	.9	-
TV MOUNTAIN	6800	2/27	52	17.1	10.2	17.2
TWELVEMILE CREEK	5600	2/25	57	27.1	8.0	21.1
TWELVEMILE CREEK PILLOW	5600	3/01	SP	22.8	9.1	17.7
TWENTY-ONE MILE	7150	2/26	46	13.6	10.0	16.6
TWIN CREEKS	3580	2/28	40	14.0	3.2	12.0
TWIN LAKES	6510	2/25	117	46.6	21.3	38.2
TWIN LAKES PILLOW	6510	2/25	SP	43.4	21.4	38.7
UPPER HOLLAND LAKE	6200	2/27	91	33.9	20.4	33.7
WALDRON	5600	3/01	34	11.2	1.0	10.1
WALDRON PILLOW	5600	3/01	SP	8.8	4.2	10.1
WARM SPRINGS	7800	2/23	62	20.4	12.2	-
WARM SPRINGS PILLOW	7800	2/23	SP	21.0	13.4	-
WEASEL DIVIDE	5450	2/23	87	30.9	23.1	32.4
West Rosebud	7500	2/24	27	7.3	3.1	9.8
WEST YELLOWSTONE	6700	2/26	35	9.5	4.6	11.1
WEST YELLOWSTONE PILLOW	6700	2/26	SP	8.0	4.8	8.0
WHISKEY CREEK	6800	3/01	60	21.4	11.5	17.9
WHISKEY CREEK PILLOW	6800	3/01	SP	15.7	10.4	14.9
WHITE MILL	8700	2/24	79	27.2	15.5	25.0
WHITE MILL PILLOW	8700	2/24	SP	22.6	13.5	20.8
WHITE PINE RIDGE	8850	2/26	21	4.2	3.2	4.6
WILLOW CREEK	6500	2/26	22	5.6	3.6	8.7
WOOD CREEK	5960	2/28	37	12.6	3.6	-
WOOD CREEK PILLOW	5960	3/01	SP	10.4	4.9	-
WRONG CREEK	5700	2/25	47	13.5	6.2	13.4
WRONG RIDGE	6800	2/25	62	19.2	9.5	18.3
IDAHO						
ABOVE BURKE (ID)	4100	2/25	51	18.1	-	22.9
BEAR MOUNTAIN (ID)	5400	2/26	145	61.8	37.4	53.7
BEAR MOUNTAIN PILLOW (ID)	5400	3/01	SP	68.1	-	-
BIG SPRINGS (ID)	6500	2/26	55	20.2	12.1	18.7
BLACK CANYON (ID)	7960	2/26	91	36.6	22.2	29.9
BLACK MOOSE (ID)	8160	2/26	100	40.2	21.8	36.1
CAMP CREEK (ID)	6580	2/25	28	8.1	6.8	9.8
CRAB CREEK PILLOW (ID)	6860	3/01	SP	11.8	-	-
HALVERSON CREEK (ID)	4850	2/26	120	53.0	35.2	39.1
HUMBOLDT GULCH (ID)	4250	2/25	42	13.6	-	-
HUMBOLDT GULCH PILLOW (ID)	4250	3/01	SP	14.1	-	-
ISLAND PARK (ID)	6290	2/26	50	16.7	11.6	-
ISLAND PARK PILLOW (ID)	6290	3/01	SP	15.3	-	-
KILGORE (ID)	6320	2/26	32	10.4	8.8	10.6
KIT CARSON (ID)	4950	2/25	34	11.7	-	-
LATHAM SPRINGS (ID)	7630	2/26	85	34.0	20.0	28.6
LOLO PASS (ID)	5230	2/25	83	31.8	12.9	27.5
LOOKOUT (ID)	5250	2/25	85	30.6	16.6	31.0
LOOKOUT PILLOW (ID)	5250	3/01	SP	30.5	-	-
LUCKY DOG (ID)	6860	2/26	73	27.8	16.0	22.1
MOOSE CREEK (ID)	6200	3/01	EST	21.5	12.6	15.6
MOOSE CREEK PILLOW (ID)	6200	3/01	SP	21.5	-	-
MOSQUITO RIDGE (ID)	5200	2/25	106	38.3	23.3	34.6
MOSQUITO RIDGE PILLOW (ID)	5200	2/25	SP	33.7	-	-
SAVAGE PASS (ID)	6170	2/26	82	29.0	15.0	24.1
SAWTELL MOUNTAIN (ID)	8720	2/26	93	33.6	-	28.4
SUNSET (ID)	5540	2/25	112	39.1	22.9	32.6
SUNSET PILLOW (ID)	5540	3/01	SP	35.8	-	-
TARGHEE PASS (ID)	6980	2/25	36	14.1	7.6	13.6
VALLEY VIEW (ID)	6680	2/25	45	14.6	9.2	15.6
WHITE ELEPHANT (ID)	7710	2/26	71	25.3	14.7	18.4
WHITE ELEPHANT PILLOW (ID)	7710	2/28	SP	25.3	-	-

SNOW MARCH 1, 1982		THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (inches)	Water Content (inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average
WYOMING						
BALD MOUNTAIN (WY)	9380	2/28	56	12.2	8.8	19.3
BALD MOUNTAIN PILLOW (WY)	9380	2/28	SP	15.2	-	-
BEARTOOTH LAKE PILLOW (WY)	9270	2/24	SP	19.8	-	-
BURGESS R.S. (WY)	7880	2/24	22	5.1	3.1	7.1
BURGESS R.S. PILLOW (WY)	7880	2/24	SP	5.5	-	-
CANYON (WY)	7940	3/01	EST	15.6	7.8	14.3
CANYON PILLOW (WY)	7940	3/02	SP	15.2	-	-
EAST ENTRANCE (WY)	6960	2/26	39	12.1	4.8	9.7
FIVE SPRINGS FALLS (WY)	7620	2/26	19	4.0	2.2	7.3
LAKE CAMP (WY)	7780	3/01	35	9.6	5.9	8.3
LUPINE CREEK (WY)	7380	3/01	30	7.7	4.5	9.9
NORRIS BASIN (WY)	7500	3/02	38	10.5	5.2	10.1
OLD FAITHFUL (WY)	7400	3/01	45	13.7	8.7	-
PARKERS PEAK PILLOW (WY)	9400	3/01	SP	23.2	-	-
STEAMBOAT POINT (WY)	7560	2/24	19	3.0	1.3	6.8
SYLVAN LAKE PILLOW (WY)	8420	2/26	SP	21.8	-	-
SYLVAN PASS (WY)	7100	2/26	46	16.4	6.7	12.2
THUMB DIVIDE (WY)	7980	2/24	63	20.7	9.6	18.2
TOGWOTEE PASS (WY)	9580	2/26	90	31.4	16.8	-
WOLVERINE (WY)	7650	2/26	41	13.6	7.5	10.7
WOLVERINE PILLOW (WY)	7650	2/24	SP	11.6	-	-
YOUNTS PEAK (WY)	8350	2/25	EST	20.8	6.0	19.4
ALBERTA						
AKAMINA (AL)	5810	2/24	66	18.6	-	5.8
BOW RIVER (AL)	5080	2/23	39	8.7	9.1	8.3
BOW RIVER SUMMIT (AL)	6660	2/26	47	10.8	14.5	14.3
CHATEAU LAWN (AL)	5710	2/23	39	8.7	11.4	10.7
CUTHEAD LAKE (AL)	7250	2/24	48	11.0	-	-
HIGHWOOD SUMMIT BUSH (AL)	7250	2/23	50	9.5	12.5	14.2
LARCH VALLEY (AL)	7740	2/24	62	15.7	-	-
LEE CREEK Q (AL)	4890	2/22	8	4.5	-	7.0
LITTLE ELBOW SUMMIT (AL)	7090	2/23	42	8.7	10.1	9.6
MIRROR LAKE (AL)	6590	2/23	39	8.4	10.1	10.4
MOUNT SKOKI (AL)	6740	2/24	48	11.3	-	-
MUD LAKE (AL)	6200	2/23	47	11.6	-	-
NIGEL CREEK (AL)	6400	3/01	54	14.0	15.2	14.7
PIPESTONE UPPER (AL)	5300	2/23	39	9.2	9.2	8.6
PTARMIGAN HUT (AL)	7150	2/24	55	12.8	14.7	13.7
SUNSHINE VILLAGE (AL)	7300	2/25	73	20.3	18.7	19.8
SUNWAPTA FALLS (AL)	4590	3/01	32	6.9	6.8	6.9
BRITISH COLUMBIA						
FERNIE (BC)	3510	2/25	26	8.9	3.4	7.9
FERNIE EAST (BC)	4100	2/25	45	15.1	10.3	13.9
FERNIE NE (BC)	3510	2/25	31	10.2	6.8	8.9
FIDELITY MOUNTAIN (BC)	6130	2/27	127	44.5	38.5	43.0
FIELD (BC)	4200	2/25	30	8.3	6.8	5.9
GLACIER (BC)	4100	2/27	78	28.3	24.3	23.6
GRAY CREEK LOWER (BC)	5080	2/28	56	15.4	14.2	16.0
KICKING HORSE (BC)	5410	2/25	51	12.8	13.4	13.1
KIMBERLEY LOWER VOR (BC)	4490	2/25	30	8.6	7.1	8.0
KIMBERLEY MIDDLE VOR (BC)	5510	2/25	42	11.0	9.7	10.9
KIMBERLEY UPPER VOR (BC)	7020	2/25	56	16.0	14.7	17.5
MARBLE CANYON (BC)	4990	3/02	59	14.4	10.4	13.2
MORRISSEY RIDGE (BC)	6100	2/25	78	26.5	18.1	25.4
MOUNT ABBOT (BC)	6490	2/22	139	45.5	40.2	40.6
MOYIE MOUNTAIN (BC)	6360	3/03	55	15.1	12.8	16.3
SINCLAIR PASS (BC)	4490	3/01	37	11.6	4.9	5.6
SULLIVAN MINE (BC)	5080	2/25	45	12.0	12.2	12.6
UPPER ELK RIVER (BC)	4400	2/22	17	6.1	2.5	6.9

Average based on 1963-77 period. A - Aerial observation; water content estimated.
SP - Snow Pillow observation; water content only.

Snow depth is obtained by flying over aerial markers in remote areas of the Yellowstone River drainage. The water content is estimated by comparing snow density with manually measured snow courses.

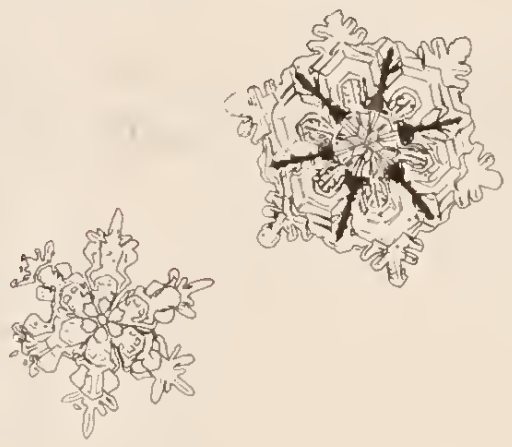
Columbia River Drainage

STREAMFLOW FORECASTS

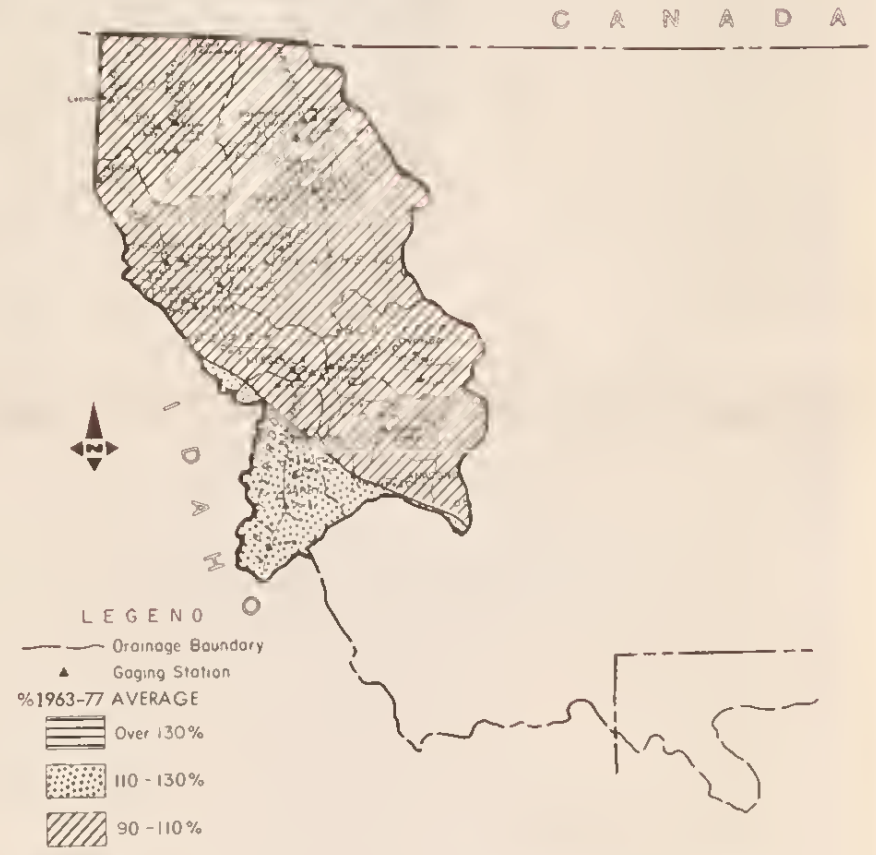
BASIN, STREAM and/or FORECAST POINT	PERIOD	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average	THIS YEAR FORECAST Thousand Acre Feet	THIS YEAR FORECAST Percent of Average	PAST RECORD THOUSAND ACRE FEET Last Year	PAST RECORD THOUSAND ACRE FEET Average
		APRIL - SEPTEMBER				APRIL - JULY				APRIL - JUNE			
KOOTENAI RIVER below Libby Dam (1)		7,570	104	6,726	7,246	6,450	104	5,516	6,178				
FISHER RIVER near Libby		248	92		240	235	93		253				
YAAK RIVER near Troy		526	98		537	502	98		514				
KOOTENAI RIVER at Leonia (1)		9,300	105	7,941	8,883	8,090	105	6,601	7,727	6,460	105	4,573	6,150
INFLOW MOULTON RESERVOIR nr BUTTE (Million Gallons)						288	101	378	286	265	102	352	260
WARM SPRINGS CREEK AT MEYERS DAM near Anaconda (2)		48.1	95		50.7	39.2	95		41.2				
FLINT CREEK near Southern Cross (3)		18.2	98	23.8	18.5	15.2	99	20.3	15.4				
FLINT CREEK below Boulder Creek (4)		73.1	94		77.6	58.2	95		61.3				
INFLOW LOWER WILLOW CREEK RESERVOIR near Hall (5)		17.6	104		16.9	16.6	104		16.0				
MIDDLE FORK ROCK CREEK near Philipsburg		93.6	119		78.8	84.5	119		71.1				
NEVADA CREEK near Finn		22.0	93		23.6	20.2	93		21.8				
BLACKFOOT RIVER near Bonner		1,040	102		1,017	940	102		920	815	103		794
CLARK FORK RIVER above Milltown (6)		844	100		843	732	100		730	620	101		613
CLARK FORK RIVER above Missoula		1,884	101	1,530	1,859	1,672	101	1,359	1,651	1,435	102	1,148	1,408
WEST FORK BITTERROOT RIVER near Conner (7)		240	128		187	222	129		172				
BITTERROOT RIVER near Darby		765	127	445	602	705	128	401	552	620	129	339	480
SKALKAHO CREEK near Hamilton		66.5	116		57.4	58.0	116		49.8				
BURNT FORK CREEK near Stevensville (8)		43.5	112		38.8	38.1	113		33.6				
BITTERROOT RIVER at Missoula (9)		1,865	121		1,543	1,730	122		1,416	1,480	122		1,211
CLARK FORK RIVER below Missoula		3,749	110		3,405	3,402	111		3,069	2,915	111		2,618
CLARK FORK RIVER at St. Regis		4,920	109	3,586	4,521	4,430	109	3,240	4,078	3,800	109	2,797	3,492
NORTH FORK FLATHEAD RIVER near Columbia Falls		1,880	95		1,969	1,695	95		1,782	1,430	95		1,498
MIDDLE FORK FLATHEAD RIVER near West Glacier		1,900	99	1,504	1,911	1,740	99	1,385	1,750	1,475	100	1,134	1,470
SOUTH FORK FLATHEAD RIVER near Columbia Falls (10)		2,330	101	1,815	2,302	2,190	101	1,714	2,159	1,910	101	1,475	1,884
FLATHEAD RIVER at Columbia Falls (10)		6,290	99	5,061	6,330	5,790	99	4,664	5,827	4,940	100	3,860	4,964
SWAN RIVER near Big Fork		670	98		681	591	99		596				
FLATHEAD RIVER near Polson (11)		7,400	100	6,097	7,394	6,830	100	5,622	6,806	5,785	100	4,600	5,779
CLARK FORK RIVER near Plains (11)		12,900	105	10,071	12,340	11,700	104	9,190	11,222	9,980	105	7,570	9,507
THOMPSON RIVER near Thompson Falls		264	100		263	235	100		234				
PROSPECT CREEK at Thompson Falls		146	102		143	137	103		133				
CLARK FORK RIVER at Whitehorse Rapids (12)		14,700	107		13,781	13,400	107		12,519	11,400	107		10,633

(1) Adjusted for storage in Lake Koocanusa
(2) Adjusted for storage in Silver Lake, diversions to and pumping from Georgetown Lake.
(3) Adjusted for storage in Georgetown Lake, diversions from and pumping to Silver Lake.
(4) Sum Flint Creek at Maxville and Boulder Creek at Maxville.
(5) Sum of North Fork Lower Willow Creek near Hall and South Fork Lower Willow Creek near Hall.
(6) Difference in observed flow Clark Fork above Missoula and Blackfoot near Bonner.
(7) Adjusted for storage in Painted Rocks Reservoir.
(8) Adjusted for diversion into Sunset Highline Canal.
(9) Difference in observed flow Clark Fork above and below Missoula.
(10) Adjusted for storage in Hungry Horse Reservoir.
(11) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.
(12) Adjusted for storage in Hungry Horse Reservoir, Flathead Lake and Noxon Rapids Reservoir.

ALL FORECASTS PREPARED IN COOPERATION WITH THE NATIONAL WEATHER SERVICE



It is not unusual for snow surveyors to measure 12 to 15 feet of snow at higher elevation snow courses in the Columbia River Drainage.



COLUMBIA RIVER DRAINAGE
MONTANA
MOUNTAIN SNOW WATER EQUIVALENT

SUMMARY of SNOW MEASUREMENTS
(COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF Last Year	THIS YEAR'S SNOW WATER AS PERCENT OF Average †
East Kootenay/BC.	10	118	108
Kootenai/Montana	26	168	106
Kootenai above Bonners Ferry...	36	157	106
Little Bitterroot	5	188	100
N. Fk. Flathead..	8	130	95
M. Fk. Flathead..	9	158	104
S. Fk. Flathead..	12	145	104
Swan	9	135	102
Flathead	43	143	101
Stillwater & Whitefish.....	5	156	99
Clark Fork above Blackfoot	35	168	103
Blackfoot	20	202	106
Upper Clark Fork above Missoula .	55	182	105
Bitterroot	16	215	122
Lower Clark Fork below Missoula .	17	192	107
Clark Fork (Total w/o Flathead)...	88	193	109
Pend O'Reille (Clark Fork & Flathead)	131	169	106
Columbia (Pend O'Reille & Kootenai)	124	180	108

February snowfall improves snowpack

Most areas received average to well above average snowfall during February.

The Bitterroot River and Rock Creek headwaters continue to show above average snowpack with all other drainages reporting near to slightly above average snow water content. Many high elevation snow courses in the Flathead and Kootenai River headwaters received 10 to 18 inches of precipitation during February, bringing the snowpack from below average levels a month ago to near average conditions now.

Some lower elevation melt was noted during February, but very little water loss from the snowpack was noted above the foothill elevations. Some runoff was generated from this melt, but in many areas this melt water went completely into the soil. The mountain snowpack is settling and becoming more dense with warm temperatures but no melt has occurred at higher elevations.

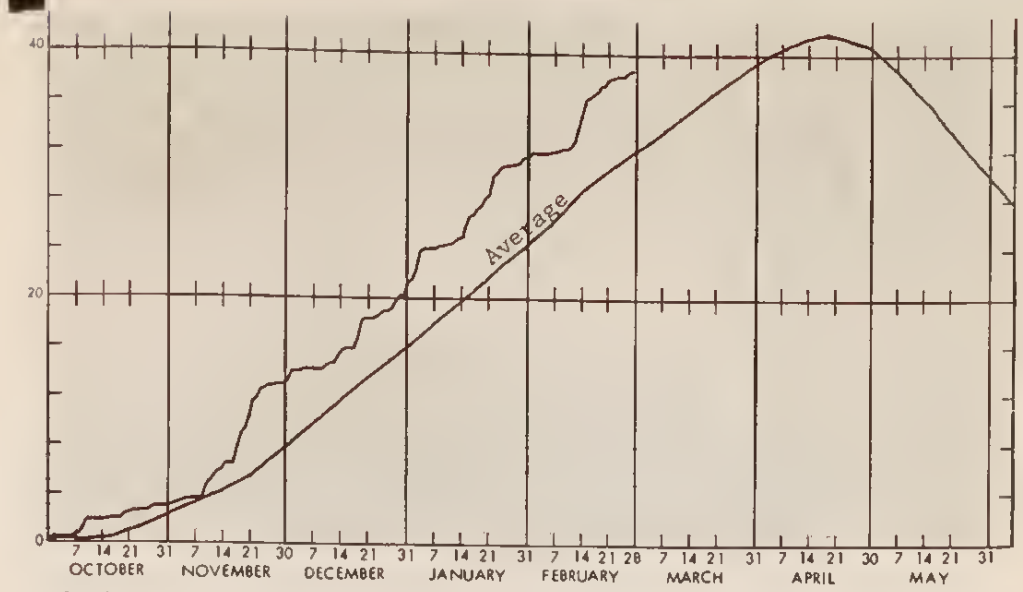
WATER SUPPLY OUTLOOK
Expressed as "Poor, Fair, Average, Excellent" With Respect to Usual Supply

STREAM or AREA	Flow Period: Spring Season	Flow Period: Late Season
Tobacco	Avg	Avg
Little Bitterroot....	Avg	Avg
Mission Valley	Avg	Avg
Flint Creek	Avg	Avg
Upper Clark Fork	Avg	Avg
Nevada Creek	Avg	Avg
Blackfoot	Avg	Avg
West-side Bitterroot	Exc	Exc
East-side Bitterroot	Exc	Avg
Bitterroot River	Exc	Exc
Lower Clark Fork	Avg	Avg

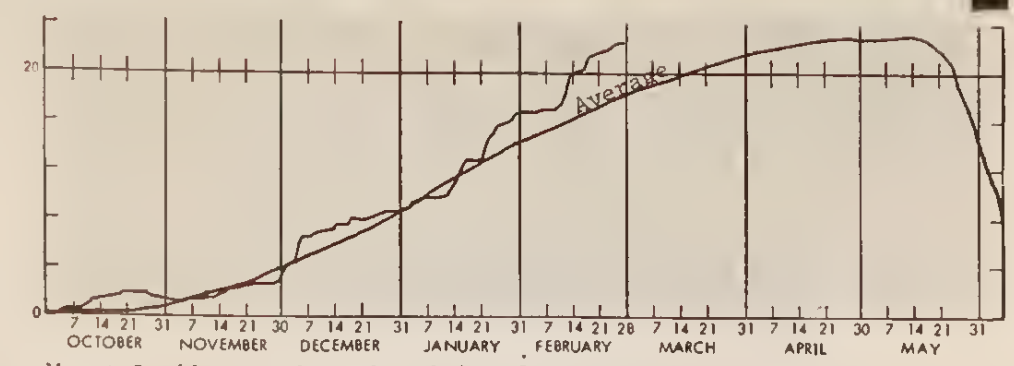
Adequate irrigation supplies expected

All streams and rivers are forecast to have near to above average runoff this spring and summer. The Bitterroot River and Rock Creek are predicted to have runoff in the range of 15 to 30 percent above average. Most other drainages should have runoff within 5 to 10 percent of average. Irrigation water supplies are expected to be adequate in most areas.

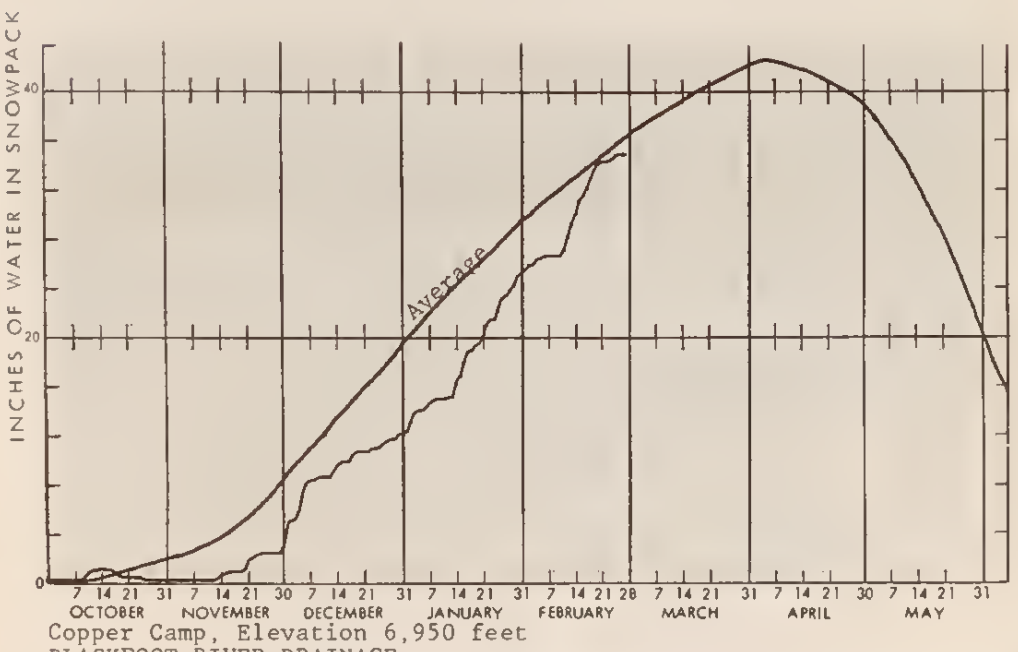
SNOW PILLOW DATA



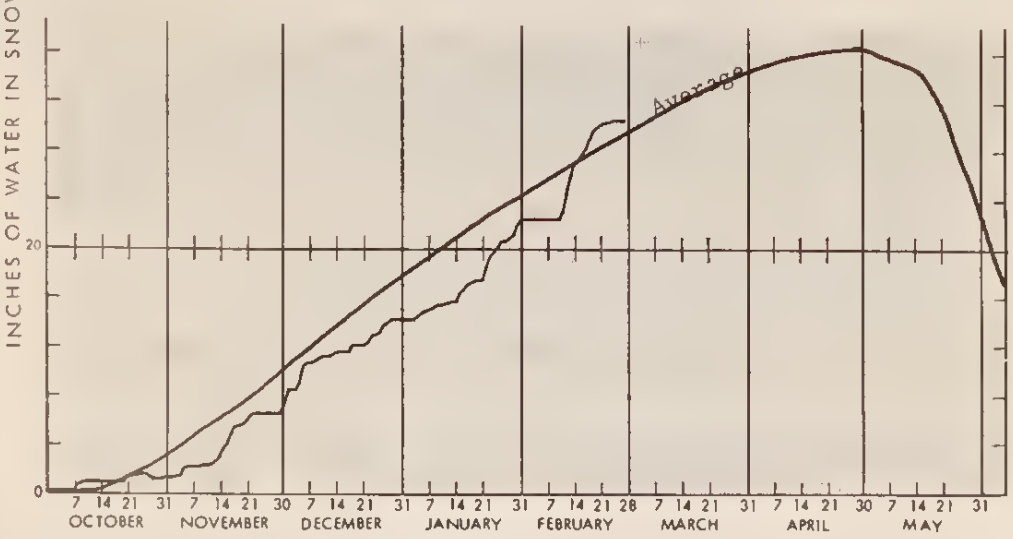
Black Bear, Elevation 7,950 feet
MADISON RIVER DRAINAGE



Mount Lockhart, Elevation 6,400 feet
FLATHEAD - MARIAS - TETON RIVER DRAINAGES


INCHES OF WATER IN SNOWPACK
40
20
0
Average
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY

Copper Camp, Elevation 6,950 feet
BLACKFOOT RIVER DRAINAGE


INCHES OF WATER IN SNOWPACK
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Average
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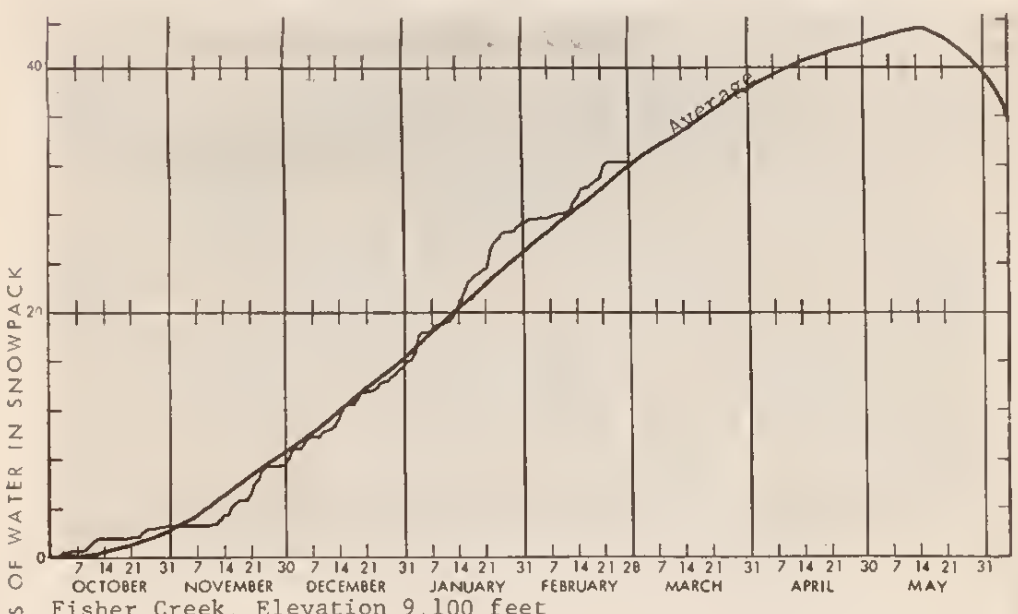
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY

Stahl Peak, Elevation 6,050 feet
KOOTENAI - FLATHEAD RIVER DRAINAGES


INCHES OF WATER IN SNOWPACK
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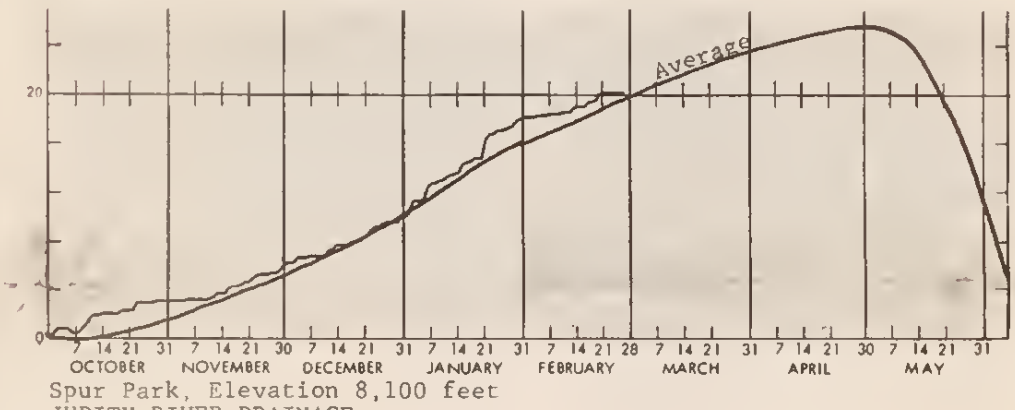
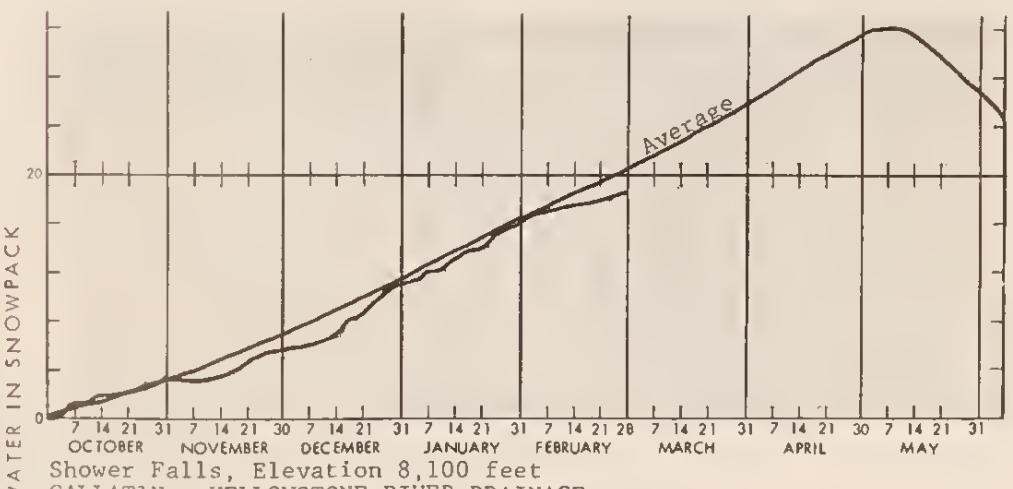
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY

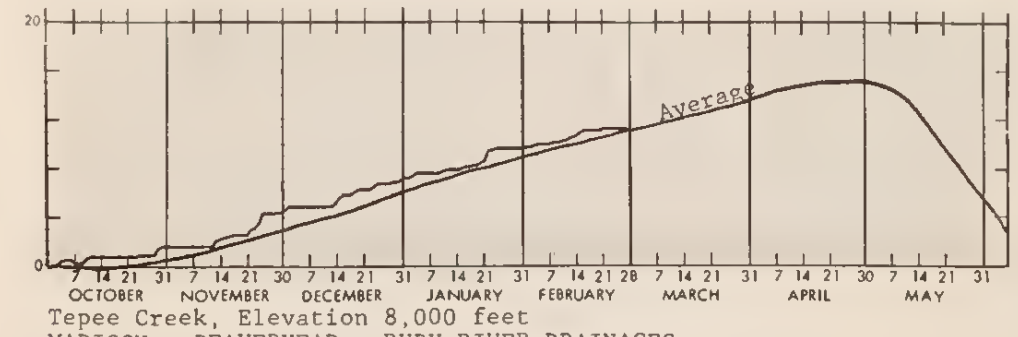
Fisher Creek, Elevation 9,100 feet
YELLOWSTONE - BOULDER - STILLWATER - CLARK'S FORK RIVER DRAINAGES



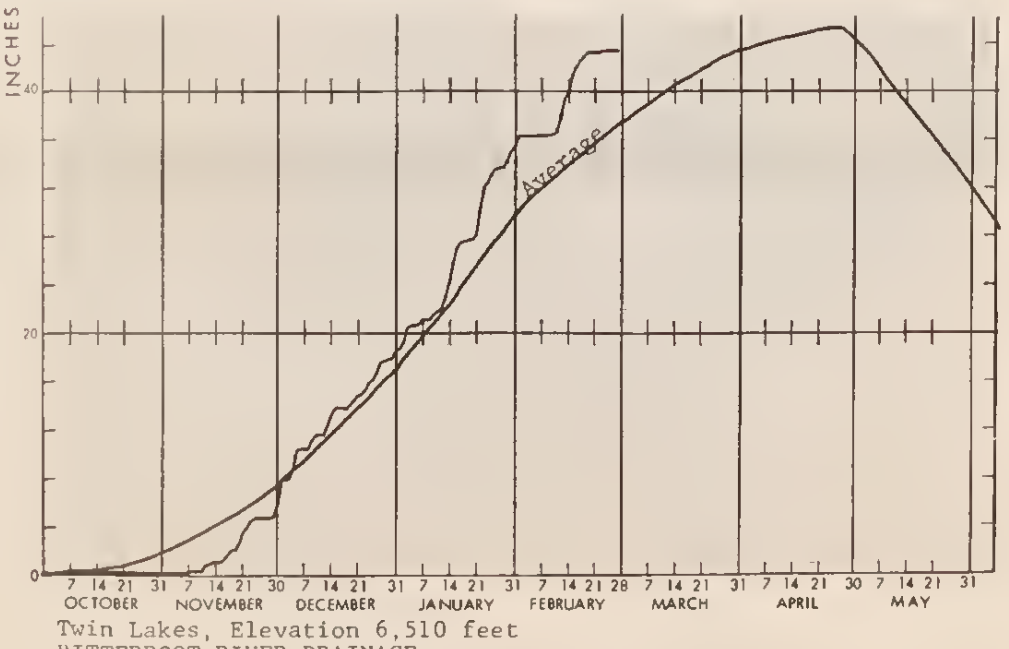
Spur Park, Elevation 8,100 feet
JUDITH RIVER DRAINAGE


INCHES OF WATER IN SNOWPACK
20
0
Average
7 14 21 31 7 14 21 30 7 14 21 31 7 14 21 31 7 14 21 28 7 14 21 31 7 14 21 30 7 14 21 31
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY

Shower Falls, Elevation 8,100 feet
GALLATIN - YELLOWSTONE RIVER DRAINAGE



Tepee Creek, Elevation 8,000 feet
MADISON - BEAVERHEAD - RUBY RIVER DRAINAGES


INCHES OF WATER IN SNOWPACK
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Average
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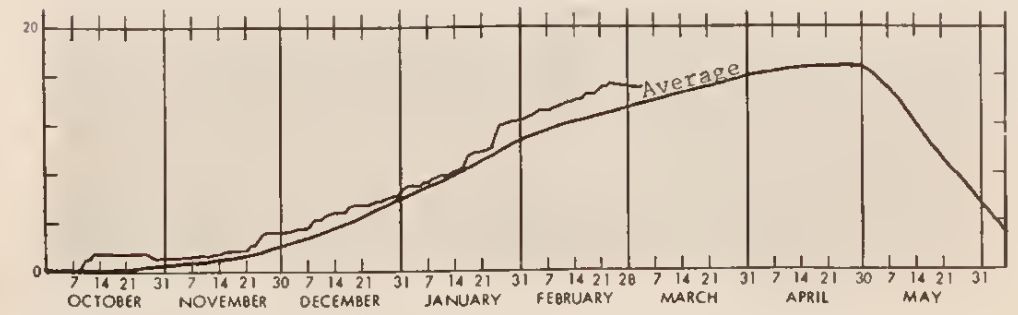
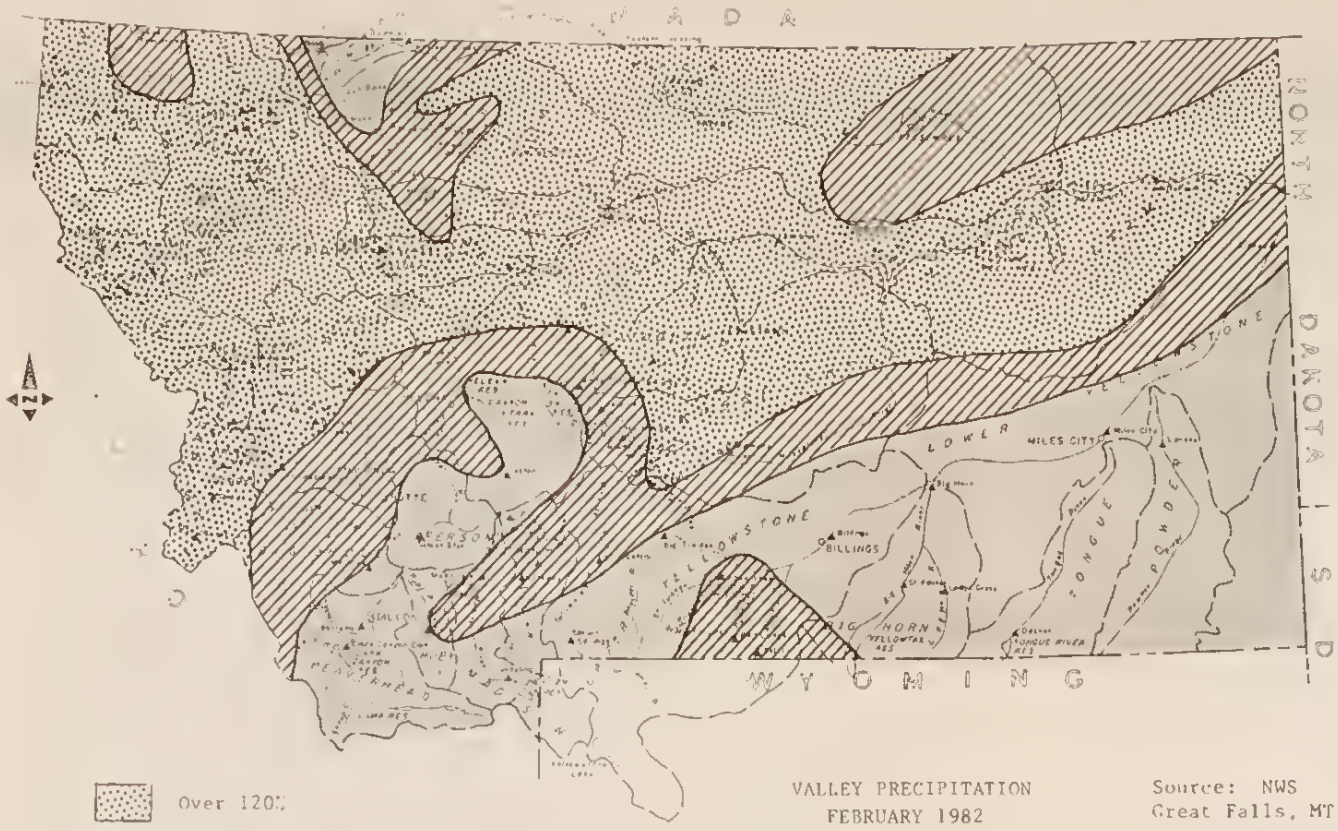
OCTOBER NOVEMBER DECEMBER JANUARY FEBRUARY MARCH APRIL MAY

Twin Lakes, Elevation 6,510 feet
BITTERROOT RIVER DRAINAGE



Black Pine, Elevation 7,100 feet
UPPER CLARK FORK RIVER DRAINAGE



VALLEY PRECIPITATION
FEBRUARY 1982

Source: NWS
Great Falls, MT

RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH February 28

Average based on 1963-77 period.

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage This Year	Usable Storage Last Year	Usable Storage Average
	COLUMBIA				
Kootenai	Koocanusa	5,748.2	2,203.0	2,155.0	---
Flathead	Hungry Horse	3,451.0	2,327.0	2,769.0	2,200.0
	Flathead Lake	1,791.0	744.4	858.2	994.6
	Camas (4)	45.2	22.6	24.6	21.9
	Mission Valley (8)	100.3	24.8	38.8	38.7
Clark Fork	Georgetown Lake	31.0	29.6	28.4	25.6
	Lower Willow Creek	4.9	2.3	2.3	1.7
	Nevada Creek	12.6	8.0	7.8	5.6
	Noxon Rapids	334.6	310.9	318.2	299.1
Bitterroot	Painted Rocks	31.7	---	---	17.4
	Como	34.9	---	25.3	13.6
	MISSOURI				
Beaverhead	Lima	84.0	26.2	52.4	40.2
	Clark Canyon	257.2	160.1	164.7	137.9
Ruby	Ruby	38.8	---	30.5	27.7
Madison	Hebgen Lake	377.5	273.8	276.3	243.3
	Ennis Lake	41.0	31.6	29.8	35.4
Gallatin	Middle Creek	8.0	3.8	4.1	3.6
Missouri	Canyon Ferry	2,043.0	1,535.0	1,611.0	1,606.0
	Hauser & Helena	61.9	63.0	51.8	60.6
	Lake Helena	10.4	10.9	10.7	10.0
	Holter Lake	81.9	79.6	77.2	64.6
	Fort Peck Lake	18,910.0	14,100.0	14,980.0	15,370.0
Smith	Smith River	10.6	7.3	6.1	7.2
	Newlan Creek	12.4	10.1	9.8	---
Musselshell	Bair	7.0	3.8	4.6	4.9
	Martinsdale	23.1	11.3	10.6	9.9
	Deadman's Basin	72.2	---	53.5	49.4
Sun	Gibson	99.1	50.3	62.8	44.6
	Willow Creek	32.2	23.8	19.8	21.8
	Pishkun	32.0	19.6	19.3	16.4
Marias	Lower Two Medicine	11.9	---	11.3	5.8
	Four Horns	19.2	---	11.2	13.1
	Swift	30.0	10.0	20.9	15.4
	Lake Frances	111.9	77.8	78.2	71.0
Milk	Elwell (Tiber)	1,347.0	491.8	531.3	538.9
	Beaver Creek	3.5	---	1.7	1.5
	Fresno	127.2	31.5	43.0	66.4
	Nelson	66.8	28.8	20.7	41.9
	HUDSON BAY				
St. Mary's	Lake Sherburne	64.3	18.1	38.9	22.5
	YELLOWSTONE				
Stillwater	Mystic Lake	21.0	3.1	3.5	7.2
Clark's Fork	Cooney	27.4	1.0	15.2	15.3
Tongue	Tongue River	68.0	18.5	14.7	37.0
Bighorn	Bighorn Lake	1,356.0	859.7	852.7	527.8

SATELLITE SNOW COVER

MISSOURI RIVER BASIN
Above
Canyon Ferry Dam

DATE	PERCENT SNOW COVER	AVERAGE SNOWLINE ELEVATION IN FEET
November 8, 1981	9.5	8535
November 19, 1981	53	6530
November 26, 1981	100	3800
November 29, 1981	100	3800
December 7, 1981	71	5770
December 17, 1981	100	3800
December 20, 1981	91	4680
December 29, 1981	95	4380
January 6, 1982	96	4300
January 10, 1982	91	4680
January 17, 1982	100	3800
February 3, 1982	100	3800
February 18, 1982	76	5540
February 24, 1982	88	4890
February 28, 1982	76	5540

AGENCIES AND ORGANIZATIONS COOPERATING IN MONTANA SNOW SURVEYS

GOVERNMENT AGENCIES
- Canada
  - Department of the Environment
    - Atmospheric Environment Service
    - Water Management Service
  - British Columbia Ministry of Environment
    - Inventory and Engineering Branch, Hydrology Section
  - Alberta Environment
    - Technical Services Division
- Federal
  - Department of the Army - Corps of Engineers
  - Department of Agriculture - Forest Service
  - Department of Agriculture - Soil Conservation Service
  - Department of Commerce - National Environmental Satellite Service
  - Department of Commerce - National Weather Service
  - Department of Interior - Bureau of Indian Affairs
  - Department of Interior - Fish and Wildlife Service
  - Department of Interior - Geological Survey
  - Department of Interior - National Park Service
  - Department of Interior - Bureau of Reclamation
  - Department of Energy - Bonneville Power Administration

STATE AGENCIES
- Montana Conservation Districts
- Montana Department of Fish, Wildlife and Parks
- Montana Department of Natural Resources and Conservation
- Montana State University - Agricultural Experiment Station
- University of Montana - School of Forestry

PRIVATE ORGANIZATIONS
- The Anaconda Company
- Big Sky of Montana
- Butte Water Company
- Flathead Valley Community College
- Montana Power Company

Other organizations and individuals furnish valuable information for snow survey reports. Their cooperation is gratefully acknowledged.

U.S. GOVERNMENT PRINTING OFFICE
1982 593-052